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DYNAMICAL BEHAVIOR OF SHIRASE GLACIER IN RELATION TO DETERIORATION OF THE SHELF ICE (ABSTRACT)

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Recent thinning of the Antarctic ice sheet has been found at the middle stream of the Shirase drainage basin, East Antarctica, through intermittent surveys in the last 20 years. The strain rate of the ice sheet, obtained in the observations, was about $+10\times10^{-5}$/a and -3×10^{-5}/a along the longitudinal and vertical directions, respectively, near Mizuho Station in the middle stream of Shirase Basin. The strain rates for the last 9000 years, on the other hand, were found to be about $+14\times10^{-5}$/a and -7×10^{-5}/a respectively, based upon analyses on an ice core retrieved at Mizuho Station. A steady state model calculation gave values for the strain rate intermediate between the survey data and the core data. These results have been explained, by a two dimensional non-steady state model, in terms of deterioration of the ice shelf at the exit of Shirase Basin, which could have taken place roughly 2000 years before the present.

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